

Executive Summary
Montana Height Modernization Program (MTHMP) – 2008 Revision2

The challenges of managing a rapidly growing state, the realization that availability of reliable geodetic control is on the decline due to development and construction, the modernized use of engineering and construction systems, and the need to respond to homeland security and other emergencies make it imperative that Montana continue to develop and improve its geographic information infrastructure. Montana Height Modernization provides a mechanism for significantly improving the availability and accuracy of our geographic information and maps. This will greatly assist all Montana users of spatial information in managing critical issues, such as:

- **Safer Transportation Systems**
- **Energy Development & Transmission**
- **Economic Development**
- **Precision Farming**
- **Homeland Security**
- **Engineering and Construction**
- **Flood Mapping**
- **Environmental Protection**

Height Modernization is an effort of the National Geodetic Survey (NGS), an agency within the National Oceanic and Atmospheric Administration (NOAA), to assist states in improving their geodetic control networks. The primary goal of Montana Height Modernization is to utilize global positioning system (GPS) technology and establish a statewide geodetic network/infrastructure that efficiently supports, enhances and improves geospatial activities within the state.

The Montana Department of Transportation in cooperation with the Montana Height Modernization Working Group, a consortium of public and private sector surveyors, GIS professionals, program managers and other interested parties, is soliciting grant funds for the purpose of developing a height modernization program in the State of Montana. This working group has developed a tentative multi-year plan. Efforts in the first year will be directed towards further development/refinement of the *Montana Height Modernization Plan* and as funds allow continual development of an outreach/education plan, additional research into establishing the Montana Geodetic Reference Center, coordinating and leading Montana's spatial data infrastructure efforts, developing plans for a Montana CORS network, providing education and outreach for geodetic reference systems, identifying gravity potential and leveling projects that support height modernization, developing one or more height modernization demonstration projects, bringing a group of public and private interests together to provide ongoing support for the Montana height modernization project, etc. Throughout the duration of the program these items are expected to be accomplished in partnership with the NGS through the Geodetic Advisor program, volunteer efforts, and through the administration of contracts awarded to the private sector.

Continuing support beyond FY2008 will be required to provide the benefits outlined in the *Montana Height Modernization Program Plan*. Current estimates indicate \$5.0M will be required over a multi-year period to fully implement height modernization across all of Montana.

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Investment in Montana Height Modernization will:

- Provide a denser, more accurate geodetic control network tied to the National Spatial Reference System; available statewide, not just in the most populated areas.
- Provide the framework for a more accurate, more accessible GIS, available statewide.
- Enhance and benefit all areas of transportation: engineering, navigation, tracking, and planning.
- Provide an accurate control network to aid the mapping of critical infrastructure and supporting accurate up-to-date maps.
- Resolve floodplain inaccuracies and lack of reliable vertical control for floodplain certification, to provide communities with accurate information about flood risks.
- Enhance and support reservoir and well monitoring and well locations.
- Support precision agriculture and make implementation less expensive, enabling the efficient use of fertilizers and pesticides, thus reducing pollution.

Requested Action:

We request that grant funds in the amount outlined be awarded to the Montana Department of Transportation for the purpose of funding the Montana Height Modernization Program (MTHMP) -2008.

Miscellaneous Information:

Project Title:	Montana Height Modernization Program (MTHMP) – 2008
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